SYPOSIS OF BASIS FOR FINDING THAT OREGON HAS FAILED TO SATISFY ITS CONDITION FOR ADDITIONAL MANAGEMENT MEASURES FOR FORESTRY

1998 CONDITION: Within two years, Oregon will identify and begin applying additional management measures where water quality impairments and degradation of beneficial uses attributable to forestry exist despite implementation of the 6217(g) measures. (1998 Findings, Section X).

2015 FINDING: Oregon has not satisfied this condition. Therefore, Oregon has failed to submit an approvable program under CZARA.

BASIS FOR DECISION:

- January 13, 1998, Conditional Approval Findings:
  - NOAA and EPA noted that although Oregon's program includes management measures for forestry in conformity with the CZARA guidance, best available information indicates that existing water quality impairments are occurring due to forestry in certain areas and that existing FPRs are inadequate to restore water quality and fully support designated beneficial uses.
  - We call out four areas where existing practices under the Oregon Forest Practice Act and rules should be strengthened to meet to attain water quality standards and fully support beneficial uses:
    - protect riparian areas for medium and small fish bearing streams, and non-fish bearing (type "N") streams;
    - protect high-risk landslide areas;
    - address the impacts of forest roads, particularly on so-called "legacy" roads; and
    - ensure adequate stream buffers for the application of herbicides, particularly on non-fish bearing streams.
- January 30, 2015, Final Findings: NOAA and EPA find that the State has failed to adopt additional management measures to sufficiently address the four concerns called out in the 1998 conditional approval findings for the reasons stated below.

Protection of Riparian Areas

What the State Proposed:

- Regulatory: Riparian buffer/management requirements for fish-bearing streams (~20 ft no cut and harvest restrictions to ~50-70 ft from stream). No regulatory buffer requirements for non-fish streams (~60-70% of coastal nonpoint management area).
- Voluntary: Voluntary measures such a large wood placement, retaining additional basal area, and treating non-fish bearing streams as fish-bearing streams.
- Potential Rule Change: Board of Forestry is considering increasing riparian protection requirements for fish-bearing streams.

Why State's Efforts Are Not Sufficient:

- A significant body of science, including state and ODF studies, clearly indicate that riparian protection around small and medium fish bearing streams and non-fish bearing streams in Oregon is not sufficient to protect water quality and beneficial uses.

- For example: The 2011 ODF RipStream study found that FPA riparian protections on private forest lands did not ensure achievement of the Protection of Cold Water criterion (PCW) under the Oregon water quality standard for temperature.
- Even the Board of Forestry has acknowledged current rules are not providing adequate protection for small and medium fish-bearing streams.

- Achieving proposed rule change would be an important accomplishment for the state but rule must be adopted before it can count toward state's coastal nonpoint program. NOAA/EPA are still unsure what the scope of final rule change will be or even if any change will be adopted.
- Oregon's buffer protections are also much less stringent than requirements for neighboring states and federal lands.

What We're Recommending:

- Adopt rule change for fish-bearing streams as soon as possible.
- Identify and adopt additional management measures necessary to protect small non-fish bearing streams to ensure attainment of water quality standards and designated uses.

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Forestry Roads

What the State Proposed:

- Regulatory: Board of Forestry has made several improvements to general road maintenance measures to improve water quality:
  - establishment of a "Critical Locations" policy to avoid building roads in critical locations such as high hazards landslide areas, steep slopes, or within 50 feet of waterbodies;
  - creation of additional rules to address wet-weather hauling; and
  - revision of an existing road drainage rule to reduce sediment delivery
- Voluntary: several different restoration and monitoring activities
  - OWEB voluntary Road Hazard and Identification and Risk Reduction Project where forestland owners survey road networks to identify roads that pose risks to salmonid habitat and prioritize roads for remediation. Oregon reports that thousands of road miles have been inspected and repaired across the state since the inception of this program in 1997.
  - Cooperative agreement with the USDA Forest Service to update the State's GIS data layer for forest roads. The data layer will help the State conduct a rapid road survey to evaluate and prioritize road risks to soil and water resources.
  - Undertaking a third-party audit in 2014 to assess compliance with the FPA rules governing forest road construction and maintenance among other things.

Why State's Efforts Are Not Sufficient

- New Regulatory Drainage Requirements: Requirements are triggered only when new road construction or re-construction of existing roads occurs. The rule changes and new policies do not sufficiently address water quality problems associated with "legacy roads" (e.g., roads that do not meet current state requirements with respect to siting, construction, maintenance, and road drainage).
- Voluntary Rd Hazard/Identification Program: State did not indicate the program's impact within the coastal nonpoint program management area or how many of these projects addressed active forest roads and roads retired according to current FPA practices versus problems associated with older, legacy roads.
- Agreement with USDA to Update GIS Data Layers: Oregon submittal noted it hoped to begin survey in 2014 but can't count toward program until complete. Also, federal agencies are not aware if the survey and GIS layer will consider legacy roads or how the state will use to data to direct future management actions.
- Third-Party Audit: Issues resulting from legacy roads and general road maintenance issues where construction or reconstruction is not occurring would not be captured during compliance audit of FPA rules since outside scope of rules.
- State has not met CZARA requirements for voluntary programs.
- 2005 Oregon Coastal Coho Assessment by OWEB/ODFW shows that old roads make up majority of forest roads and exact road inventory on private land is not widely available.
- Science shows that old forest roads present greater sedimentation and landslide risk. For example, one study found that forestry roads in Oregon built before 1984, have higher landslide rates than those built later.[1]
- Sedimentation and erosion from forestry roads have adverse impacts on salmon. For example, NOAA National Marine Fisheries Services' scientific analysis for their Endangered Species Act Section 7 listing for Oregon Coast Coho Salmon, continues to recognize forestry roads, including legacy roads, as a source of sediment and a threat to Oregon coastal coho salmon.

What We're Recommending:

- Move forward with establishing road survey or inventory program that considers both active, inactive, and legacy roads. The program should establish, among other things, a timeline for addressing priority road issues, including retiring or restoring forest roads that impair water quality, and a reporting and tracking component to assess progress for remediating identified forest road problems.
- Voluntary programs state has described may enable state to meet this aspect of the condition but State needs to meet all CZARA requirements for using voluntary programs. That is:
  - provide a commitment to use its back-up authority to ensure implementation of the forestry road additional management measures, when needed;
  - include a mechanism for tracking and monitoring implementation of these voluntary measures to carry out identified priority forest road improvements; and

[1] Oregon Department of Forestry and Oregon Department of Environmental Quality. 2002. Sufficiency Analysis: A Statewide Evaluation of Forest Practices Act Effectiveness in Protecting Water Quality, Oregon Department of Forestry and Oregon Department of Environmental Quality, p. 33, Sessions, 1987.

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Landslide Prone Areas

What the State Proposed:

- Regulatory: Amended FPA rules to require the identification of landslide hazard areas in timber harvesting plans and road construction and placed certain restrictions on harvest and road activities within these designated high-risk landslide areas for public safety.
- Voluntary: Promotes voluntary practice through Oregon Plan; gives landowners credit for leaving standing live trees along landslide-prone areas as a source of large wood.

Why State's Efforts Are Not Sufficient:

- Regulatory Approach: Landslide hazards are addressed only as they relate to risks for losses of life and property, not for potential water quality impacts. Oregon still allows timber harvest and the construction of forest roads, where alternatives are not available, on high-risk landslide hazard areas as long as it is not deemed a public safety risk.
- Voluntary Approach: Practice is not designed to protect high-risk erosion areas but rather to ensure large wood is available to provide additional stream complexity when a landslide occurs. Also state has not met other CZARA requirements to use voluntary programs for its coastal nonpoint program.
- A number of studies continue to show significant increases in landslide rates after clear cutting compared to unmanaged forests in the Pacific Northwest. Research also shows that landslides degrade water quality and impair designated uses in Pacific Northwest streams.

What We're Recommending:

- If state plans to use voluntary approaches, it also needs to meet requirements to use voluntary programs. In addition to describing voluntary program:
  - describe how it will monitor and track implementation of that approach, and
  - provide a commitment to use its back-up authority, when needed.
- Establish a suite of measures to provide better protection of landslide areas. Examples include:
  - Adopt harvest and road construction restrictions similar to those applicable in areas where landslides pose risks to life and property, for all high-risk landslide prone areas with the moderate to high potential to impact water quality and designated uses.
  - Develop a scientifically rigorous process for identifying high-risk areas and unstable slopes based on field review by trained staff.
  - Develop more robust voluntary programs to encourage and incentivize the use of forestry best management practices to protect high-risk landslide areas that have the potential to impact water quality and designated uses, such as employing no-harvest restrictions around high-risk areas and ensuring that roads are designed, constructed, and maintained in such a manner that

the risk of triggering slope failures is minimized.
- Institute a monitoring program to track compliance with the FPA rules and voluntary guidance for high-risk landslide prone areas and the effectiveness of these practices in reducing slope failures.
- Establish an ongoing monitoring program that assesses the underlying causes and water quality impacts of landslides shortly after they occur and generates specific recommendations for future management. In particular, look for ways to reduce the occurrence of channelized landslides.
- Integrate processes to identify high-risk landslide prone areas and specific best management practices to protect these areas into the TMDL development process.

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Aerial Application of Herbicides

What the State Proposed:

- Regulatory:
  - Follows FIFRA label requirements.
  - ODF requires all pesticide applicators to complete a notification form of potential pesticides that may be applied.
  - ODF/ODA require pesticide applicators undergo training and obtain licenses. Training includes a review of regulations and requirements for protecting streams during aerial application. To reduce aerial drift, Oregon has guidance that instructs applicators to consider temperature, relative humidity, wind speed, and wind direction.
- Voluntary:
  - Water Quality Pesticide Management Plan: Plan is an interagency guide providing state-wide and watershed-level actions to protect surface and groundwater from potential impacts of pesticides, including herbicides. Plan, approved by EPA Region 10, describes a continuum of management responses, ranging from voluntary to regulatory actions the state could take to address pesticide issues. Plan focuses on using water quality monitoring data as the driver for adaptive management actions.
  - Pesticide Stewardship Partnership: Pilot pesticide water quality monitoring effort. ODEQ works with State and local partners to collect and analyze water samples and use the data to focus technical assistance and best management practices on streams and pesticides that pose a potential aquatic life or human health impact.

Why State's Efforts Are Not Sufficient

- January 13, 1998, conditional approval findings noted that Oregon had published forest practices rules that require buffer zones for most pesticide applications. However, these rule changes did not address aerial application of herbicides along non-fish bearing streams. NOAA and EPA determined that stream spray buffers for the aerial application of herbicides on non-fish bearing streams on forestlands were inadequate and should be strengthened to attain water quality standards and fully support beneficial uses.

- Within the coastal nonpoint management area, non-fish bearing streams comprise 60 to 70 percent of the total stream length.
- Oregon does not require riparian buffers during forest harvests along non-fish bearing streams, which might otherwise provide a spray buffer. Furthermore, there are no riparian buffers to filter herbicide-laden runoff before it enters the streams.
- Given the lack of monitoring for aerial application of herbicides on non-fish bearing streams in Oregon's coastal forestlands and the potential for adverse water quality and designated use impacts from the aerial application of herbicides, Oregon should take additional steps to ensure non-fish bearing streams are adequately protected during the aerial application of herbicides.
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    - Oregon and other Pacific Northwest states have already recognized the need to go beyond the national FIFRA label requirements. Neighboring states have stricter buffer requirements for herbicides application along non-fish bearing streams:
        - Washington: 50 ft. riparian and spray buffer
        - Idaho: 100 ft. riparian and spray buffers.
        - California: has riparian buffers for non-fish bearing streams, which implicitly restrict the aerial application of herbicides near the stream.
- ODF's Notification Form: Form does not include guidance for spraying over non-fish bearing streams. Also allows for applicator to list many possible pesticides so it is difficult to determine which pesticide is actually applied.
- Water Quality Pesticide Management Plan and PSP: Water quality monitoring data on pesticides is still limited in the State. Oregon has only established eight pilot PSP monitoring areas in seven watersheds, none of which are within the coastal nonpoint management area. Difficult to operate an adaptive management-driven program if you lack data to know when adjustments are needed.

What We're Recommending:

- Could adopt regulatory changes to institute spray buffers for the aerial application of herbicides along non-fish bearing streams similar to neighboring states and/or institute riparian buffers along non-fish bearing streams, which, by default, would also provide a buffer during aerial application.
- Should develop and maintain more robust and targeted studies of the effectiveness of its pesticide monitoring and best management practices within the coastal nonpoint management area. State should design its monitoring program in consultation with EPA and NMFS so that it generates data that are also useful for EPA pesticide registration reviews and NMFS biological opinions that assess the impact of EPA label requirements on listed species.

- Could institute voluntary programs, backed by enforceable authorities. Elements of the voluntary program could include:
  - Develop more specific guidelines for voluntary buffers or buffer protections for the aerial application of herbicides on non-fish bearing streams.
  - Educate and train aerial applicators of herbicides on the new guidance and how to minimize aerial drift to waterways, including non-fish bearing streams, and surrounding communities;
  - Revise the ODF Notification of Operation form required prior to chemical applications on forestlands to include a check box for aerial applicators to indicate they must adhere to FIFRA labels for all stream types, including non-fish bearing streams;
  - Track the implementation of voluntary measures for the aerial application of herbicides along non-fish bearing streams and assess the effectiveness of these practices to protect water quality and designated uses;
  - Conduct direct compliance monitoring for FIFRA label requirements related to aerial application of herbicides in forestry;
  - Provide better maps of non-fish bearing streams and other sensitive sites and structures to increase awareness of these sensitive areas that need protection among the aerial applicator community; and
  - Employ GPS technology, linked to maps of non-fish bearing streams to automatically shut off nozzles before crossing non-fish bearing streams.
- If the state chooses to pursue voluntary programs, they would need to meet all CZARA requirements for voluntary programs:
  - describe the process the state will use to monitor and track implementation of the voluntary practices, and
  - demonstrate a commitment to use the back-up authority.

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